

### Claims

What is claimed is:

1. A system for managing welding consumable(s), comprising:  
a welder having a consumable(s) monitor; and,  
a remote system operatively coupled to the welder *via* a network, the remote system adapted to facilitate management of welding consumable(s) for the welder based at least in part upon information received from the consumable(s) monitor.
2. The system of claim 1, wherein the remote system is further adapted to facilitate ordering and/or purchasing of a consumable based at least in part upon information received from the consumable(s) monitor.
3. The system of claim 2, wherein the consumable is at least one of wire, gas, flux, contact tip and consumable electrode.
4. The system of claim 3 wherein the wire is used for at least one of gas metal arc welding, flux cored arc welding, metal cored arc welding, submerged arc welding, narrow groove welding, hot wire filled TIG welding, cold wire filled TIG welding, plasma arc welding, electron beam and laser welding, and hardface welding.
5. The system of claim 3 wherein the consumable electrode is used for at least one of arc gauging and manual shielded arc welding.
6. The system of claim 2, wherein the ordering/purchasing of the consumable is further based at least in part upon a customer ordering model stored on the remote system.

7. The system of claim 2, wherein the order/purchasing of the consumable is further based at least in part upon a vendor managed replenishment contract.
8. The system of claim 7, wherein ownership of the consumable(s) remains with a supplier, distributor and/or manufacturer until the consumable(s) has been used by the customer.
9. The system of claim 1, wherein the welder is leased to a customer and enforcement of the lease is performed at least in part based upon information received from the consumable(s) monitor.
10. The system of claim 1, wherein the remote system is further adapted to enforce welding equipment and welding software maintenance, service or upgrade contract, having terms that a maintenance fee is waived or reduced if order and usage requirement of welding consumable(s) is met.
11. The system of claim 1, wherein a customer is invoiced by the remote system for consumables based at least in part upon information received from the consumable(s) monitor.
12. The system of claim 1, wherein the network employs at least one of Ethernet, Wireless Ethernet, PPP (point-to-point protocol), point-to-multipoint short-range RF (Radio Frequency), WAP (Wireless Application Protocol), Bluetooth, IP, IPv6, TCP, User Datagram Protocol (UDP), PPTP (Point-to-Point Tunneling Protocol), L2TP (Layer Two Tunneling Protocol), IPsec (Internet Protocol Security) and SOCKS.
13. The system of claim 1, wherein information exchanged between the welder and the remote system includes at least one of HTML, SHTML, VB Script, JAVA, CGI Script, JAVA Script, dynamic HTML, ASP, ActiveX, XML, PDF, EDI and WML format.

14. The system of claim 1, further comprising at least one of a LAN, a phone connection and a gateway to couple the welder and/or the remote system to the network.
15. The system of claim 1, wherein the welder interfaces to the remote system *via* at least one of a local network, an extranet and the Internet.
16. The system of claim 1, wherein the welder further comprises an arc/weld quality monitor providing information regarding weld quality to the remote system.
17. The system of claim 16, wherein a customer is invoiced by the remote system for consumable(s) based at least in part upon information regarding weld quality received from the arc/weld quality monitor.
18. The system of claim 17, wherein the remote system tracks patterns of usage of welding consumable(s) and/or welding consumable(s) inventory level(s).
19. The system of claim 17, wherein the remote system facilitates Just-In-Time (JIT) welding consumable(s) raw material inventory management to achieve low inventory and/or high service level objectives in production.
20. The system of claim 1, wherein the remote system, at least based in part upon information received from the consumable(s) monitor, is adapted to perform enterprise resource planning, production capacity planning and/or welding consumable(s) forecast planning by a welding consumable(s) manufacturer, distributor and/or supplier.
21. A system for managing welding consumable(s), comprising:  
a welder having a consumable(s) monitor; and,

a local system operatively coupled to the welder *via* a first network, the local system adapted to facilitate management of welding consumable(s) for the welder based at least in part upon information received from the consumable(s) monitor.

22. The system of claim 21, further comprising a remote system operatively coupled to the local system *via* a second network, the remote system adapted to facilitate management of welding consumable(s) for the welder.

23. The system of claim 22, wherein the second network is at least one of a local network, an extranet and the Internet.

24. The system of claim 22, wherein the local system initiates orders from the remote system based at least in part upon information received from the consumable(s) monitor.

25. The system of claim 24, wherein the consumable is at least one of wire, gas, flux, contact tip and consumable electrode.

26. The system of claim 25 wherein the wire is used for at least one of gas metal arc welding, flux cored arc welding, metal cored arc welding, submerged arc welding, narrow groove welding, hot wire filled TIG welding, cold wire filled TIG welding, plasma arc welding, electron beam and laser welding, and hardface welding.

27. The system of claim 25 wherein the consumable electrode is used for at least one of arc gauging and manual shielded arc welding.

28. The system of claim 21, wherein the local system further comprises at least one of a production control system, a financial accounting system and a materials management system.

29. The system of claim 28, wherein the production control system, at least based in part upon information received from the consumable(s) monitor, is adapted to perform production capacity planning and/or welding consumable(s) forecast planning.

30. The system of claim 28, wherein the financial accounting system, at least based in part upon information received from the consumable(s) monitor,

31. The system of claim 28 wherein the materials management system, at least based in part upon information received from the consumable(s) monitor, is adapted to perform welding consumable(s) inventory management and/or welding consumable(s) procurement.

32. The system of claim 21, wherein the first network is at least one of a local network, an extranet and the Internet.

33. The system of claim 21, wherein the first network and/or the second network employs at least one of Ethernet, Wireless Ethernet, PPP (point-to-point protocol), point-to-multipoint short-range RF (Radio Frequency), WAP (Wireless Application Protocol), Bluetooth, IP, IPv6, TCP, User Datagram Protocol (UDP), PPTP (Point-to-Point Tunneling Protocol), L2TP (Layer Two Tunneling Protocol), IPsec (Internet Protocol Security) and SOCKS.

34. The system of claim 21, wherein information exchanged between the welder and the local system includes at least one of HTML, SHTML, VB Script, JAVA, CGI Script, JAVA Script, dynamic HTML, ASP, ActiveX, XML, PDF, EDI and WML format.

35. The system of claim 22, wherein the welder further comprises an arc/weld quality monitor providing information regarding weld quality to the local system and/or the remote system.

36. The system of claim 35, wherein a customer is invoiced by the remote system for consumable(s) based at least in part upon information regarding weld quality received from the arc/weld quality monitor.
37. A system for managing welding consumable(s), comprising:  
means for monitoring consumable usage;  
means for determining ordering levels for a consumable; and,  
means for ordering a consumable based at least in part upon the monitored consumable usage.
38. A system for managing welding consumable(s), comprising:  
a consumable monitor component adapted to monitor consumable usage and/or consumable status of a welder;  
a customer component to facilitate welding resource management based at least in part upon information regarding consumable usage and/or consumable status received from the consumable monitor component; and,  
a supplier component adapted to receive information from the customer component to facilitate purchasing and/or ordering of welding consumable(s).
39. The system of claim 38 wherein the customer component further comprises at least one of a production control component, a financial accounting component and a materials management component.
40. The system of claim 38 wherein the consumable monitored by the consumable monitor component is at least one of wire, gas, flux, contact tip and consumable electrode.
41. The system of claim 40 wherein the wire is used for at least one of gas metal arc welding, flux cored arc welding, metal cored arc welding, submerged arc welding,

narrow groove welding, hot wire filled TIG welding, cold wire filled TIG welding, plasma arc welding, electron beam and laser welding, and hardface welding.

42. The system of claim 40 wherein the consumable electrode is used for at least one of arc gauging and manual shielded arc welding.

43. A system for managing welding consumable(s), comprising:

- a consumable monitor component adapted to monitor consumable usage and/or consumable status of a welder;

- an aggregation component for aggregating consumable usage;

- an inventory replenishment component adapted to receive information from the aggregation component

- a procurement management component adapted to receive information from the aggregation component and to determine, at least based in part upon inventory data, forecast data and/or information associated with a vendor managed replenishment contract, whether to initiate reordering of the consumable;

- a reorder proposal component for generating a reorder proposal once the procurement management component has initiated reordering of the consumable;

- an authorization component adapted to receive authorization for the reorder proposal received from the reorder proposal component;

- a reorder transmittal component for transmitting a consumable reorder; and,

- a supplier component adapted to receive the consumable reorder to facilitate purchasing and/or ordering of welding consumable(s).

44. The system of claim 43, wherein the consumable reorder is transmitted by the reorder transmittal component *via* EDI or XML.

45. A method for managing welding consumable(s), comprising:

- receiving information regarding consumable usage;

determining whether supply of a consumable has fallen below ordering threshold;  
and,

ordering consumable based at least in part upon information received regarding consumable usage.

46. The method of claim 45, further comprising aggregating information regarding consumable usage.

47. The method of claim 45 further comprising aggregating information regarding consumable ordering.

48. A method for managing welding consumable(s), comprising:  
receiving information regarding consumable usage; and,  
invoicing customer for consumable based at least in part upon information received regarding consumable usage.

49. A method for managing welding consumable(s), comprising:  
receiving information regarding consumable usage;  
receiving information regarding weld quality; and,  
invoicing customer for consumable based at least in part upon information received regarding consumable usage and/or weld quality.

50. A method for managing welding consumable(s), comprising:  
receiving information regarding usage of a consumable;  
obtaining information regarding inventory level of the consumable;  
obtaining information regarding a vendor managed replenishment contract;  
determining whether the inventory level of the consumable has fallen below a threshold ordering level ; and,  
transmitting a reorder of the consumable.



51. The method of claim 50, further comprising at least one of the following acts:  
aggregating information regarding consumable(s) usage; and,  
obtaining authorization for the reorder of the consumable.
52. The method of claim 50, wherein the act of determining whether the inventory level has fallen below the threshold ordering level is based at least in part upon at least one of a information provided in the vendor managed replenishment contract, supplier's lead time for the consumable, consumable forecast usage rate, consumable availability and consumable pricing data.
53. The method of claim 50, wherein the threshold ordering level is updated continuously and in real-time from aggregated welding consumable(s) data, supplier's lead time for the consumable, availability of the consumable and /or consumable pricing data.
54. A signal for communicating between a welder and a remote system, comprising:  
a welder having a consumable(s) monitor and communicating information regarding consumable(s) usage *via* a signal; and,  
a remote system adapted to facilitate management of welding consumable(s) for the welder based at least in part upon information received from the consumable(s) monitor *via* the signal.
55. A computer-readable medium having computer-executable instructions for executing at least a portion of the method of claim 45.
56. A computer-readable medium having computer-executable instructions for executing at least a portion of the method of claim 48.
57. A computer-readable medium having computer-executable instructions for executing at least a portion of the method of claim 50.